Influence of Leadership Behavior and Management Process on Immunization Program Implementation

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ABSTRACT

Background: *Indonesia is still ranked 4th in the world for having low DPT3 immunization coverage among children. Complete basic immunization coverage is targeted at 95% according to the strategic plan of Indonesian Ministry of Health, but it still achieves at 91.1%. This study aims to analyze leader behavior and health center management on immunization program implementation.*
Method: *Quantitative research using a cross-sectional design was conducted at the Puskesmas Biru-Biru Deli Primary Healthcare Center, Serdang District. The research population and samples consist of 122 respondents which include all 121 midwives in 17 villages and one person in charge of immunization services. The survey data were analyzed using the chi-square test and logistic regression test.*
Results: *The chi-square test showed an influence of leadership behavior and management process on immunization program implementation (p = 0.000). In the last stage of logistic regression analysis, one variable that most dominantly affected the program implementation is management process (p = 0.0000; OR = 25,497; 95% CI = 6.475-100.406). The primary healthcare center needs to improve leader's behavior and management process.*

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INTRODUCTION

HIV/AIDS Immunization is one of the essential public health efforts to effective immunity. In Indonesia, the government has made vaccination programs such as BCG, DPT, Hepatitis, Measles, and Polio techniques, as required by the World Health Organization (WHO). The WHO reported that 21.8 million children in 10 countries, i.e., the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Iraq, Nigeria, Pakistan, the Philippines, Uganda, and South Africa.[1] did not receive assistance in 2013, and 18.7 million infants or more than 60% of children worldwide did not receive regular work DPT3. Data reported by the WHO and United Nations Children's Fund (UNICEF) state that at least 80 million children aged less than 1 year suffer from diphtheria, measles, and polio due to disruption of routine services. More than half (53%) of the 129 countries reported moderate to severe impairment, or suspended vaccination services in March-April 2020. Indonesia faced major challenges in immunization services in 2020. The COVID-19 pandemic during the period caused the most widespread and largest global disruption in recent extraordinary events.[2,3,4] According to the 2017 Indonesian Health Data, complete basic immunization coverage in Indonesia was at 86.5%.[5] It did not reach the 2015 Strategic Plan of 91%. Then it increased with an average coverage of 91.1% in 2016 (HB = 87.0%, BCG = 92.7%, DPT-HB-HIB = 93.0%, Polio = 92.2%, and Measles = 92 .5%).[5]

Indonesia is still ranked 4th in the world after India, Nigeria, and the Democratic Republic of the Congo for having low vaccination coverage among children. It is estimated that 1.5 million children under five in Indonesia have not received basic immunization or other vaccines. Hence, Indonesia is one of the countries prioritized by the WHO and UNICEF to accelerate Universal Child Coverage (UCI).[6] Based on the Indonesian Demographic Health Survey (IDHS) in 2019, the infant mortality rate (IMR) was 34/1,000 live births, and the under-five mortality rate was 44/1,000 live births.[7] The survey conducted to children aged 12–23 months also showed immunization coverage for HB-0 (79.1%), BCG (87.6%), DPT-HB-3 (75.6%), Polio-4 (77.0%), and measles immunization (82.1%), respectively.[5] The UCI covers at least 80% of infants (0-11 years old) in a village. The UCI coverage in North Sumatra Province was at 79.9% in 2015 and 81.2% in 2016.[8]

Complete basic immunization coverage in the last five years was above 85%, but it still did not reach the Strategic Plan. A primary healthcare center is an institution that primarily plays in community health empowerment.

UKBM becomes the indicator success of primary healthcare center as community empowerment.[9]

Many factors influence the immunization practice. These include leadership and management of primary healthcare center. Leaders have the role to make the organization effective. Effective organization is highly dependent on leader's behavior and strategies in making decisions, coordinating, delegating tasks, communicating with others, motivating subordinates, as well as directing and guiding them.[10,11] The management system of primary healthcare centers regulates the immunization program. The midwives are obliged to serve the community to achieve the target health status in their working area. The immunization coverage of a village is measured from the quality of midwives' performance.[12]

Performance is the results from job functions or activities within a certain period. Health performance is significant to maintain and improve national development in the health sector. Some factors supporting individuals in achieving work performance include motivation, rewards, perceptions, abilities, skills, and the availability of other resources that support the performance of midwives.[13] The Biru-biru Primary Healthcare Center runs in 17 villages with 51 integrated health posts in the areas of Sidomulyo, Cndirejo, Sidodadi, Selamet, Ajibaho, Namo Tualang, Mbaruai, Kutomulyo, Tanjung Sena, Biru-biru, Namo Suro Baru, Rumah great, Kuala Dekah, Ginger extract, Penen, Peria-ria, Marwall Julu. A preliminary survey showed the immunization coverage has not yet reached the target. It was at 94% in 2018 and 88% in 2019. Interviews with 10 midwives who served in immunization services demonstrated seven midwives lacked leadership skills, such as decision-making, coordination, unjust task delegation, and ineffective communication, leading to miscommunication and less encouragement. Besides, the management of primary healthcare center was lacking in planning surveillance and immunization agenda, implementing it according to schedule, and formulating technical policies, preparing materials. Executing norms, standards, guidelines, and operations assigned by the head of division, monitoring, evaluating, and reporting surveillance and immunization agenda to leaders based on the document accountability. Based on the background above, this study aimed to analyze the influence of leader behavior and the management process happening in the Biru-biru Primary Healthcare Center on immunization program implementation.

METHOD

A quantitative study with a cross-sectional design was conducted in the Biru-Biru Primary Healthcare Center. The population was 121 midwives who worked in 17 villages as the working areas of the Biru-Biru Primary Healthcare Center and one person in charge of mentoring immunization services. In total, the samples were the total population as many as 122 people. This study has met the research ethics requirements with Letter Number 044/KEPK/UNPRI/XI/2021 issued by the Health Research Ethics Commission of Prima Indonesia University.

This study consists of independent variables, namely leader's behavior and management process; its dependent variable includes the implementation of immunization program. All respondents were given a questionnaire addressing attitudes, beliefs, and the role of mass media. Based on the validity and reliability test, all items of the questionnaire are correlated (p=0.361), indicating that they are all valid and reliable. Bivariate data analysis was performed using the chi-square test, and a multivariate analysis was done using the logistic regression test.

RESULTS AND DISCUSSION

Table 1 shows the distribution of respondents' characteristics in the Biru-Biru Primary Healthcare Center. Out of 122 respondents, the majority were aged 46-55 years (48.3%), while others were aged 26-35 years (5.7%), and the rest were aged 36 -45 years (45.1%). Most of the respondents had a Diploma of Midwifery Program (92.6%), and some held a Bachelor's Degree in Midwifery Program (7.4%).

Table 1. Characteristics of informants

Characteristics	N (122)	%
Age (years)		
26-35	7	5.7
36-45	55	45.1
46-55	59	48.3
Education		
Diploma of midwifery	113	92.6
Bachelor of midwifery	9	7.4

Table 2. Distribution of leadership behavior variable components

Leadership Behavior	SD (%)	D (%)	S (%)	A (%)	SA (%)
Decision Making					
Leaders invite their subordinates to participate in decision making	2.5	41.8	10.7	9.8	35.2
Leaders make decisions after receiving suggestions from subordinates	9	44.3	6.6	7.4	32.8
Leaders identify problems before making decisions	2.5	44.8	22.1	6.6	20.5
Leaders weigh the pros and cons of each decision	3.3	48.4	5.7	6.6	36.1
Leaders gather input before making decisions	1.6	50.8	19.7	9.8	18
Leaders inform decisions	2.5	43.4	24.6	9	20.5
Leaders evaluate the execution of decisions	14.8	26.2	18.9	5.7	34.4
Leadership Style					
Leaders provide opportunities for employees to discuss problems encountered with their job	0.8	45.9	14.8	8.2	30.3
Leaders receive and pay attention to input and information from subordinates to arrange work assignments	1.6	46.7	18	9.8	23.8
If a problem arises, a leader where I work is willing to help and provide a way out and make an organizational decision	1.6	50	11.5	9.8	27
All decisions are in the hands of the leaders	1.6	42.6	21.3	13.9	20.5
Leaders raise awareness about the importance of compliance with applicable regulations	3.3	44.3	20	11.5	24.6
Leaders pay attention to conflicts that occur in employees	8	40.2	23	11.5	24.6
Leaders always provide solutions if their subordinates ask about work-related problems	1.6	41	27	6.6	23
Leaders have a good ability to supervise his subordinates	1.6	47.5	14.8	6.6	29.5
Delegation					
Leaders give detailed instructions on tasks to their subordinates	-	48.4	8.2	2.5	41
Leaders delegate all work to the person in charge of the program	-	48.4	5.7	3.3	42.6
Leaders delegate tasks according to the abilities of their subordinates	-	49.2	5.7	4.9	40.2
Leaders assign responsibility to the person in charge of the program	-	48.4	23.8	4.9	23
Leaders assign tasks according to problems found in the field	0.8	48.5	13.9	16.4	30.3
Leaders give time to members to complete their tasks	-	37.7	33.6	8.2	20.5
Leaders delegate tasks to members according to the SOP	-	41	9.8	18.3	31.1
Leaders delegate tasks without supervision	-	31.1	22.1	26.2	20.5
Leaders provide tasks to be done effectively and efficiently	-	41.8	14.8	19.7	23.8
Communication					
Means of communication between leaders and subordinates are enough	-	56.9	5.1	5.1	32.8
I can understand the oral information conveyed by leaders	8	48.2	6.6	7.3	29.9
I can understand the written information conveyed by leaders	2.9	53.3	10.2	9.5	24.1
Leaders use polite language	2.2	54	7.3	11.7	24.8
Leaders use persuasive language so that members do not feel humiliated	5.1	46.7	14.6	9.5	24.1
Leaders use good and correct Indonesian	9.5	43.8	14.6	10.2	21.9
Leaders use gentle language	7.3	45.3	13.9	8	25.5
Leaders use easy-to-understand language	7.3	47.4	10.9	9.5	24.8

SD: Strongly Disagree, D: Disagree, S: Sometimes. A: Agree, SA: Strongly Agree

Table 3. Distribution of management process

Management Process	SD (%)	D (%)	S (%)	A (%)	SA (%)
Planning					
The primary healthcare center has taken steps to prepare the implementation of the training program	-	50.8	23	11.5	14.8
The primary healthcare center plans some time for meeting preparation routinely	-	49.2	1.6	17.2	32
The primary healthcare center always holds a mini-workshop meeting	-	50.8	-	-	49.2
The primary healthcare center plan task distribution	-	50.8	17.2	17.2	14.8
The primary healthcare center plans the target to be achieved	-	50.8	23	11.5	14.8
The primary healthcare center has conducted training before the members work there	-	49.2	1.6	35.2	13.9
The primary healthcare center conducts an external analysis to see geographical conditions	1.6	49.2	8.2	17.2	23.8
The primary healthcare center formulates strategies according to government policies	0.8	48.4	19.7	18.9	12.3
The primary healthcare center prepares the required budget	0.8	50.8	10.7	7.4	30.3
Organizing					
The primary healthcare center formulates its organizational structure	4.1	47.5	1.6	20.5	26.2
Delegation of authority is carried out to the staff implementing the immunization program (immunization clerk) in each village	9.8	41.8	4.1	20.5	23.8
The primary healthcare center elects its head based on skills and educational level	9	41.8	4.9	23.8	20.5
The primary healthcare center formulates a task assigning method or system	9	45.1	8.2	20.5	17.2
The primary healthcare center forms the clear details of the leader's duties	13.9	36.9	6.6	27.9	14.8
The primary healthcare center delegates immunization duties to a leader	10.7	42.6	11.5	17.2	18
The primary healthcare center divide the tasks according to their respective main tasks	7.4	44.3	3.3	21.3	23.8
Implementation					
Supporting facilities are available for the implementation of activities	-	41	15.6	3.3	40.2
Health cards are available in each village	0.8	54.1	3.3	14.8	27
Infant immunization registration books are available in each village	0.8	54.1	1.6	10.7	32.8
Pregnancy health cards are available in each village	-	52.5	7.4	9.8	30.3
Tetanus Toxoid (TT) cards are available in each village	0.8	50.8	7.4	17.2	23
Immunization records are available in each village	1.6	28.7	27	26.2	16.4
Officers match babies with immunization records according to schedule	1.6	44.3	16.4	27.9	9.8
Officers record and report immunization and attendance of babies to integrated health posts	5.7	33.6	13.1	26.2	21.3
Supervision					
The primary healthcare center supervises data collection and immunization implementation	-	51.6	.8	6.6	41.0
The primary healthcare center ensures the quality of vaccines according to standards	0.8	50.8	.8	4.1	43.4
The primary healthcare center ensures that all babies receive vaccination services according to dose	2.5	48.4	2.5	6.6	40.2
The primary healthcare center ensures the implementation of targeted vaccinations	3.3	45.9	8.2	3.3	39.3
The primary healthcare center ensures administrative and financial accountability by applicable regulations.	0.8	48.4	4.9	2.5	43.4
The primary healthcare center ensures standard reporting	3.3	47.5	4.1	9	36.1
The primary healthcare center complies with health protocols for administration of immunization	5.7	44.3	6.6	5.7	37.7

SD: Strongly Disagree, D: Disagree, S: Sometimes. A: Agree, SA: Strongly Agree

Table 4. Distribution of immunization program implementation

Management Process	SD (%)	D (%)	S (%)	A (%)	SA (%)
The immunization program can provide immunizations to infants/toddlers properly and correctly	0.8	50	7.4	13.9	27.9
The immunization program can follow up on infants/toddlers that did not attend immunization programs	1.6	47.5	12.3	7.4	31.1
The immunization program can recognize proper time for babies/toddlers to be immunized	2.5	49.2	8.2	15.6	24.6
The immunization program can choose/determine the people who want to immunize	9.8	38.5	32	5.7	13.9
The immunization program can achieve immunization targets	1.6	43.4	17.2	5.7	32
The immunization program can provide immunization services optimally and responsibly	2.5	43.4	21.3	16.4	16.4
The immunization program can overcome challenges in the implementation of immunization	5.7	40.2	15.6	8.2	30.3

SD: Strongly Disagree, D: Disagree, S: Sometimes. A: Agree, SA: Strongly Agree

Table 5. Chi-square tests on the influence of leader's behavior and management process on the immunization program implementation

Leader's Behavior & Management Process	Performance				p-value
	Bad		Good		
	n	%	n	%	
Decision-making					
No rule	45	36.9	22	18.0	0.009
Play a rule	23	18.8	32	26.2	
Leadership style					
No rule	46	37.7	24	19.7	0.017
Play a rule	22	18.0	30	44.3	
Delegation					
No rule	41	33.6	19	15.6	0.010
Play a rule	27	22.1	35	28.7	
Communication					
No rule	54	44.3	14	11.4	0.000
Play a rule	14	11.4	40	32.8	
Planning					
Unplanned	45	36.9	19	15.6	0.001
Planned	23	18.8	35	28.7	
Organizing					
Unorganized	53	43.4	9	7.4	0.000
Organized	15	12.3	45	36.9	
Implementation					
Not implemented	45	36.9	21	17.2	0.005
Implemented	23	18.8	33	27.0	
Supervision					
Poor	47	38.5	17	13.9	0.000
Good	21	17.2	37	30.3	

Table 2 describes the distribution of respondents' answers about leader's behavior. The majority of respondents consider leader's decision-making inadequate, and a half of the respondents disagreed with the statement "leaders receive input before making decisions". The majority did not think "leaders who work have the ability to supervise their subordinates well" (47.5%). The majority of respondents did not agree with the statement "leaders delegate tasks according to the abilities of his subordinates" (49.2%). Most of the respondents disagreed with the statement "I can understand the information conveyed by the leadership orally" (48.8%). Overall, the respondents disagreed with most of statements on leader's attitude and behavior.

Table 3 describes the distribution of respondents' answers on the management process at the primary healthcare center. The majority of respondents disagreed with the statements numbered 1,3,4,5 and 9 (50.8%). They mostly disagreed that the primary healthcare center had made an organizational structure (47.5%). The majority of them disagreed with statements 2 and 4 (54.1%). They had different through from the statement which says The primary healthcare center supervises data collection and immunization implementation (51.6%).

Table 4 shows the distribution of the immunization program implementation. The majority of respondents did not think that primary healthcare center provides immunizations to infants/toddlers properly and correctly (50%). To create good immunization program implementation, they face difficulties in achieving their immunization goals. Their officers tend to feel dissatisfied with the dictatorial leadership style that their leaders adopted. For example, they assigned tasks to the midwife without considering her capacity of performing the tasks.

Leaders often impose their tasks/jobs on their subordinates. It turns out the midwives worked under pressure in uncomfortable conditions, and they even could not complete the task in the allotted time.

The chi-square showed influences of decision making (p = 0.009), leadership style (p = 0.017), task delegation (p = 0.010), good communication (p = 0.000), planning (p = 0.001), organizing (p = 0.000), implementation (p = 0.005), and monitoring (p = 0.000) on the immunization program implementation. (see table 5)

In Table 6, the last logistic regression analysis showed only organizing that most dominantly influenced the immunization program implementation (p = 0.000, OR = 25.497, 95% CI = 6.475-100.406). Tasks that are unorganized gives a 25.497 times chance of causing poor immunization program implementation ($\beta =$ 3.239). Previous research states that leader's behavior and the management process contribute to more successful immunization programs.[14] Leadership has a positive and significant influence on the program implementation in healthcare centers.[15] It may lead to increased employee and management performance.[16,17,18]

There are shortcomings in implementing the UCI because of inadequate attention and support from various parties. Lack of resources and operational funds for routine and additional immunizations, lack of public knowledge about immunization programs and benefits, as well as inadequate facilities and infrastructure may contribute to these constraints. Some other factors found in this study are leadership and management process. In other words, effective programs depend on leader's behavior in formulating their roles and strategies. Leadership deals with the relationship between leaders and subordinates. Leaders have an important role in organizing and planning resources to achieve institutional goals. Leadership is "the art of influencing people to achieve group goals with enthusiasm and confidence. [19,20,21]

Table 6. Multivariate logistic regression test on the influence of leader's behavior and management process on the immunization program implementation

Variable	B	p-values	Exp (B) OR	95% CI For Exp (B)
Decision-making	-1.757	0.034	0.173	0.034-0.877
Communication	2.504	0.001	12.233	2.762-5.181
Planning	0.760	0.199	2.139	0.671-6.821
Organizing	3.239	0.000	25.497	6.475-100.406
Implementation	-1.769	0.034	0.171	0.033-0.876
Supervision	0.962	0.147	2.616	0.712-9.612

Some respondents mentioned the primary healthcare center was unorganized (50.8%) And less qualified (43.4%), but some respondents stated that they had good performance (7.4%). Organization variable of the healthcare center influences the immunization program implementation.[22,23] Although the primary healthcare center had formed a immunization service team, they had limited human resources and faced difficulties in performing tasks. They also did not apply any policies for orientation or training to the team. Moreover, they only performed evaluation on facilities rather than the program success. Standards operation guidelines are needed to create an organized system.[24] Results also showed the primary healthcare center never conducted early evaluation, monitoring, assessment, and follow-ups of the immunization program.

Despite the presence of immunization service team, not all members understood their duties clearly. The primary healthcare center only conducted an immunization program once a month and rarely evaluated it. Evaluation only took place on budget absorption, while they should provide planning scheme and standard administration procedures. Also, they need to appoint staff who are capable of supervision.[25,26]

How leaders take decisions will influence the success of UCI. Decision-making is not simple as it gives both positive and negative consequences at once. The speed and accuracy of decision-making may indicate the leader's competence and credibility. Slow and hesitant action to take decision may suggest that a leader does not dare to take risks. It is interesting to study how a leader can make good decisions by minimizing risk and benefiting others effectively and efficiently.

CONCLUSION

Based on the results of the study, leader behavior and management processes influence the immunization program implementation. Organizing variable is the most dominant variable that influences the immunization program implementation. Results from this study are useful for evaluating similar programs in the future. They can be used to guide health leaders to improve leadership and management skills. Future research needs to explore leadership and management variables qualitatively to get more comprehensive results.

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